

IN THE CLAIMS

Please AMEND claim 33 as follows:

33. An apparatus for illuminating a license plate of a vehicle, comprising:
a light emitting diode projecting light directed substantially away from the vehicle;
a housing substantially enclosing the light emitting diode; and,
lensless means within the housing for substantially preventing light from the diode from escaping the housing in a rearward direction and for redirecting the light through a window in the housing to illuminate the license plate in a substantially uniform manner.

REMARKS

I. Introduction

A. Request For Reconsideration

Reconsideration of the present application as amended is respectfully requested.

As an initial matter Applicants' representative wishes to thank the Examiner for noting and correcting the erroneously numbered claim 27 in the marked up version of the claims in Applicants' June 20, 2002 response to the Office Action of March 22, 2002. Applicants' representative confirms that the marked up claim was misnumbered as claim 27 and has properly been renumbered as claim 26.

To the extent necessary, at the end of the present amendment and response is a page(s) presenting a marked up version of any changes made to this application. This page(s) is captioned "MARKED UP VERSION OF CLAIMS PURSUANT TO 37 CFR 1.121."

B. The Substance Of The Office Action Of September 23, 2002

Paragraph 4 on pages 2-3 of the Office Action of September 23, 2002 rejects claims 1-6, 10-11, 16-19, 20, 24-28 and 33 under 35 U.S. 102(b) as being anticipated by U.S. Patent No. 5,934,798 to Roller et al. Paragraph 6 on pages 3-4 of the Office Action of September 23, 2002 rejects claims 7-9, 12, 15, 22, 23, 29 and 30 as being unpatentable under 35 U.S. 103(a) over the '798 patent to Roller et al. and further in view of U.S.

Patent No. 4,868,723 to Kobayashi. Paragraph 7 on page 4 of the Office Action of September 23, 2002 rejects claims 14, 21, 31 and 32 as being unpatentable under 35 U.S. 103(a) over the '798 patent to Roller et al. and further in view of U.S. Patent No. 6,095,663 to Pond et al.

C. The Statements Of The 9/23/02 Office Action Regarding the '798 Patent

The office action of September 23, 2002 states that the '798 patent to Roller et al. discloses:

a light emitting diode (12) mounted to a substrate (14), and wherein the light emitting diode projects light directed at the reflector (28), the reflector having a surface geometry from redirecting the light through a window (20) in the housing such that it substantially uniformly illuminates the license plate.

September 23, 2002 Office Action, paragraph 4, p.2-3

Roller discloses a lensless means (See 28 in Fig. 6).

September 23, 2002 Office Action, paragraph 6, p. 3-4

As discussed further below in section IV, and for the reasons set forth below in section III.A, Applicants disagree with several of these statements. In particular, Applicants disagree that the '798 patent discloses that (1) "the reflector having a surface geometry . . . such that it substantially uniformly illuminates the license plate"; and, (2) "Roller discloses a lensless means."

II. The Appropriate Legal Standard

As noted in the June 20, 2002 response to the Office Action of March 22, 2002, it is well settled that the Commissioner, through the Examiner, bears the initial duty of supplying the factual basis supporting a rejection of a patent application, including a rejection under 35 U.S.C. § 102. *See, In re Warner* 154 USPQ 173, 177 (C.C.P.A 1967). Not only does a rejection founded under 35 U.S.C. § 102 "require[s] the disclosure in a single prior art reference of each element of the claim under consideration" (*See, W.L. Gore and Assocs. Inc. v. Garlock*, 220 USPQ 303, 313 (Fed. Cir. 1983)) but it further requires that "each and every element of the claimed invention, [must be] arranged as in the claim." *See, Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*,

221 USPQ 481, 485 (Fed. Cir. 1984). "The identical invention must be shown in as complete detail as contained in the . . . claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Applicants respectfully submit that the Office Action of September 23, 2002 has failed to meet this initial duty with respect to any of the pending independent claims, claims 1, 16, 26 and claim 33 as amended as well as with respect to various dependent claims. The reasons supporting Applicants' position are set forth below.

III. The Limited Teachings Of The Prior Art Relied Upon By The Office Action

A. U.S. Patent No. 5,934,798 to Roller et al. ("the '798 patent to Roller et al.")

The '798 patent to Roller et al. does not disclose all of the elements of Applicants' claimed invention, such as the claimed reflector(s). The '798 patent to Roller et al. emphasizes the necessity of a lens. This necessity is reflected in every portion of the disclosure of the '798 patent to Roller et al. such as the abstract, summary, description, figures and claims. Moreover, the '798 patent to Roller et al. provides no teaching of reflector(s) of the type(s) claimed by Applicants. The teachings of the '798 patent provide support for only one conclusion: Roller et al. did not consider the possibility of using a complex reflector in their invention, thereby eliminating or minimizing the need for an optical lens to properly illuminate the license plate.

1. The '798 patent Repeatedly Emphasizes The Necessity Of A Lens

From the first page of the '798 patent onward the necessity of a lens is emphasized.

a. Abstract

The abstract (lines 3-4) states that the lamp assembly includes "a lens for directing the light emitted from the light emitting diodes onto the license plate."

b. Background of the Invention

In referring to prior art illumination using incandescent lamps, the background of the invention section notes that "lens elements are used to distribute the light" (col. 1, lines 19-20).

c. Summary Of The Invention

This section refers to the invention as broadly comprising various elements as part of the required lamp assembly for illumination of a vehicle license plate. Thus, even in its broadest form the disclosure of the '798 patent requires "a lens for directing the light emitted from the light emitting diodes onto the license plate" (Col. 1, lines 28-29).

d. Description Of The Preferred Embodiment

The description refers over and over again to the requirement for an additional element or elements (other than reflector 28) to direct the light in the desired fashion. First, note:

As illustrated in FIG. 1, the license lamp 10 comprises LED lamps 12, in sufficient number to provide the required amount of illumination, mounted on a circuit board 14 in a manner that provides for the uniform distribution of light to the license plate 16 (Column 1, 59-63)

Thus, the description explicitly links mounting the LEDs in a particular "manner that provides for the uniform distribution of light." The direction of light is also explicitly linked to the presence of a lens in the description:

The lens may also have optical surfaces to control the direction of the light as required by applicable industry standards.
(Column 2, lines 9-11)

The lens may be equipped with optics on one or both surfaces to control the light distribution as required by applicable industry standards.
(Column 2, lines 19-21)

e. The Figures

In every view in which the element responsible for redirecting light would be visible it is present. Namely, Figures 2, 3, 5 and 6 all illustrate element 20. As the description makes clear, element 20 is a lens (see col. 1, line 67, col. 2, line 19).

f. The Claims

There are two independent claims in the '798 patent to Roller et al., claims 1 and 7. Both independent claims 1 and 7 explicitly require "a lens for directing said light emitted from said light emitting diodes onto said license plate." (Column 3, lines 1-2, Column 3,

lines 21-22). Furthermore the dependent claims further illustrate the required role of the lens. Claims 5 and 13, dependent on claims 1 and 7, respectively, each require that "the lens has at least one optical surface."

2. The '798 Patent Does Not Disclose Applicants' Claimed Reflector

The '798 patent does not teach Applicants' claimed invention. To the contrary, with its repeated references to the necessity for a lens, the '798 patent teaches away from Applicants' claimed invention. Applicants' complex reflector(s) eliminates or minimizes the need for a lens. Applicants' claimed reflector(s) have their own optic prescription. That optic prescription may be used to provide substantially uniform illumination (without any lens if desired) pursuant to federal and/or state regulations.

a. No Teachings About The Claimed Reflector Are Found In
the Specification of the '798 Patent

In contrast to the disclosure concerning lens element 20, no mention of the necessity of a reflector is found in the abstract or summary in the '798 patent to Roller et al. The stated purpose for the reflector 28 in the '798 patent to Roller et al. is that

A reflector may be used over the LED lamp body to conceal the circuit board and to enhance the light output. Any reflector standard in the art, including but not limited to, white card, plastic or metalized reflectors may be used. (Col. 2, lines 5-9)

As shown in FIG. 5 and 6, reflector 28 may be positioned over LED lamps 12 to conceal circuit board 14 and to enhance the light output. (Col. 2, lines 32-35).

As noted in Applicants' specification, most LED light sources are designed to emit light in a conical pattern. ("That light [from an LED] is also emitted in a well-defined cone, rather than into a complete sphere like an incandescent bulb." Applicants' specification, page 8, lines 16-17.) Thus, in the '798 patent to Roller et al, it is this cone of light that must be redirected by an optical lens to create the desired illumination pattern. The lens in the Roller et al. patent is designed to spread these cones of light in a controlled fashion so as to uniformly illuminate the license plate.

The reflector(s) referred to in the Roller et al. patent, however, serve a different purpose. The two disclosed purposes are: to "conceal the circuit board" and to "enhance the light output." The flat reflector illustrated as element 28 in FIG. 5 of the '798 patent would serve the first purpose only. Since the light from an LED is emitted in a forward direction, none of it would impinge upon a flat reflector located behind the LED, and thus, concealing the circuit board would be the only possible use for such an element. This is confirmed by the above quoted language in the '798 patent's specification that refers to using a white card or plastic as the material for the reflector. Neither of these materials would reflect light in a controlled fashion. The reflector illustrated as element 28 in FIG. 6 of the '798 patent would be the kind of reflector that would enhance the light output of the LED(s). Some LEDs emit light into a rather wide cone, and many lenses are designed to direct light that is already substantially collimated. The horn or paraboloid shaped reflector 28 in FIG. 6 (also see '798 patent, col. 2, lines 35-36) would serve to enhance the light output of a wide-angle LED by concentrating the light from the LED into a collimated beam that could then be spread appropriately by the lens. The reference ('798 patent, col. 2, lines 35-36) to a paraboloid as the possible shape of this reflector confirms this use, as paraboloid reflectors are well known to produce collimated light.

The reflector(s) disclosed in the '798 patent, at best, merely enhance the light output of the individual LEDs. The reflector(s) of the '798 patent do not redirect the light to discrete test points in a photometric pattern. Thus, the '798 patent always refers to the lens (element 20) as necessary to direct the light toward the license plate (see section III.A.1 above). Applicants' claimed invention, however, uses a complex reflector to redirect the light to the license plate thereby minimizing or eliminating the need for the optic lens that the '798 patent to Roller et al. (and U.S. 4,868,723 to Kobayashi) requires to accomplish the direction of light.

b. As With The Specification, The Claims Of The '798 Patent
Teach Away From Applicants' Claimed Reflector

The only claims of the '798 patent to Roller et al. that mention a reflector are dependent claims. The text of dependent claims 6 and 14 merely further reaffirms the stated purpose in the specification, namely "a reflector to enhance light output from the light emitting diodes." The reflector 28 of the '798 patent, at best, merely enhances the light output. No teaching at all is present that the reflector 28 disclosed is intended for the purpose of providing the claimed substantially uniform illumination.

B. U.S. Patent No. 4,868,723 to Kobayashi ("the '723 patent to Kobayashi")

In the June 20, 2002 response to the March 22, 2002 Office Action, Applicants noted their disagreement with the statement in paragraph 2 on page 3 of the March 22, 2002 Office Action that "Kobayashi discloses that the apparatus does not include a lens (See Fig. 5 and Fig. 6)." The apparatus disclosed in the '723 to Kobayashi would be ineffective without the use of a lens. Figure 6 clearly shows a stepped lens 8, and figure 5 is a partial view meant to show only the shape of the reflector. ('723 to Kobayashi column 2, line 37: "FIG. 5 is a perspective view of a reflector.")). The text of the patent clearly indicates that a lens is always used in conjunction with the reflector described. See for example '723 to Kobayashi: column 1, lines 8-23; column 2, lines 56-60; column 3, lines 26-27.

The Office Action of September 23, 2002 states that "Kobayashi discloses that a parabolic reflector redirects the light in a forward direction onto the license plate." (Paragraph 6, page 3). The Office Action goes on to argue that "[i]t would have been obvious to a person having ordinary skill in the art at the time of the invention to substitute Kobayashi's parabolic reflector with Roller's reflector, since a parabolic reflector is a well known alternative for a [f]lat reflector as suggested by Roller (col. 2, lines 35-36)." (Paragraph 6, pages 3-4). The Office Action fails to note, however, that Kobayashi teaches that an optical lens must be used between the parabolic reflector and the license plate to redirect the light. In fact, Kobayashi goes into great detail in explaining the design of the optical steps in the lens that function to spread the light on the plate. Without the lens in the Kobayashi invention, the light reflected from the parabolic reflector would miss the license plate completely.

Applicants' claimed complex reflector minimizes or eliminates the lens element, depending for the most part or entirely on the complex reflector's prescription to redirect the light to the license plate. Parabolic reflectors have been used for years to collimate light. Applicants' reflector, however, is of a more complex shape that does not simply collimate light, but redirects the light to discrete test points in the photometric pattern.

IV. Discussion

The Office Action of September 23, 2002 stated that Applicants' prior response had been fully considered but were not found to be persuasive. The Office Action of September 23, 2002 responded:

In response to the applicant's argument that "the '798 to Roller et al. does not disclose the claimed reflector having a surface geometry for redirecting the light through a window in the housing such that it substantially uniformly illuminates the license plate, as broadly interpreted of the present claimed invention, Roller's reflector (28) could [be] a "**curved** free form reflector. Furthermore, in response to the applicant's argument that Roller does not teach[] a "**lensless** means", Roller's reflectors (28) does not have a lens. Therefore, as broadly interpreted of the present claimed invention, Roller teaches the "**lensless** means.["] September 23, 2002 Office Action, paragraph 8, p. 4-5 (emphasis in original)

A. Independent Claim 1 Is Not Anticipated By The '798 Patent

Independent claim 1 was rejected under 35 U.S.C. 102(b) based on the '798 patent to Roller et al. As set forth in detail in section III above, the '798 patent does not disclose the claimed reflector "having a surface geometry for redirecting the light through a window in the housing such that it substantially uniformly illuminates the license plate." At best, the only reflector disclosed is a "reflector standard in the art." ('798 patent, Column 2, line 7). Thus the reflector disclosed in the '798 patent does not contain the surface geometry required by independent claim 1. The stated purpose of the reflector of the '798 patent does not conform with the requirement of Applicants' independent claim 1, that the reflector have "a surface geometry . . . such that it substantially uniformly

illuminates the license plate” with the redirected light emitted from the LED(s). As discussed above in section III.A.1, to the extent the ‘798 patent discloses a mechanism for accomplishing substantially uniform illumination, that mechanism is the product of lens element 20, not reflector 28. As should be understood, Applicants have defined substantially uniform illumination in the Background of the Invention section (Applicants’ specification, page 1, lines 14-25) as being the photometric pattern necessary to satisfy the federal regulations as expressed in the Federal Motor Vehicle Safety Standards.

B. Independent Claim 16 Is Not Anticipated By The ‘798 Patent

Independent claim 16 was rejected under 35 U.S.C. 102(b) based on the ‘798 patent to Roller et al. At a minimum, the ‘798 patent to Roller et al. does not disclose the claimed “curved **free form** reflector.” The reflector(s) 28 disclosed in the ‘798 to Roller et al. are a flat reflector (see FIG. 5) and a horn or paraboloid shaped reflector (see FIG. 6). None of the reflector(s) disclosed in the ‘798 patent are a free form reflector. As previously noted, parabolic reflectors have been used for years to collimate light. A parabolic reflector, however, is not a free form reflector. Applicants’ claimed reflector is a complex shape that does not simply collimate the light, but redirects the light to discrete test points in the photometric pattern.

C. Independent Claim 26 Is Not Anticipated By The ‘798 Patent

Independent claim 26 was rejected under 35 U.S.C. 102(b) based on the ‘798 patent to Roller et al. As part of Applicants’ June 20, 2002 response to the Office Action of March 22, 2002, Applicants amended independent claim 26 to recited that “the reflector segments being configured to substantially uniformly illuminate the license plate.” As Applicants have set forth at great length in section III.A above, the ‘798 patent does not disclose a reflector or reflectors with an optical prescription that will substantially uniformly illuminate the license plate of a vehicle.

D. Independent Claim 33 Is Not Anticipated By The ‘798 Patent

Independent claim 33 was rejected under 35 U.S.C. 102(b) based on the ‘798 patent to Roller et al. First, as discussed in Applicants June 20, 2002 response, the ‘798 patent

to Roller et al. does not disclose an LED "directed substantially away from the vehicle," as is required by independent claim 33. Instead, as is apparent from Figures 1 and 3 of the '798 patent to Roller et al., the array of LED lamps disclosed are directed substantially at the vehicle. Applicants respectfully submit that this alone is sufficient to distinguish independent claim 33 from the '798 patent.

Despite this Applicants have amended independent claim 33 to further clarify that the lensless means redirects light "to illuminate the license plate in a substantially uniform manner." Thus, the '798 patent clearly does not disclose the required element of amended claim 33 of a "lensless means." The '798 patent does disclose a reflector 28. Reflector 28, however, does not "illuminate the license plate in a substantially uniform manner." To accomplish that function the '798 patent discloses that a lens is necessary. Applicants' claimed invention in claim 33, however, is "lensless." Thus, for the reasons set forth above in section III, it is readily apparent that the '798 patent teaches away from the idea of a lensless system.

E. Dependent Claims

1. Claims Dependent On Independent Claim 1

Claims 2-15 are dependent on independent claim 1 or a claim dependent thereon. Thus, dependent claims 2-15 are respectfully submitted to be allowable, for at least the reason that they are dependent upon allowable independent claim 1.

2. Claims Dependent On Independent Claim 16

Claims 17-25 are dependent on independent claim 16 or a claim dependent thereon. Thus, dependent claims 17-25 are respectfully submitted to be allowable, for at least the reason that they are dependent upon allowable independent claim 16.

3. Claims Dependent On Independent Claim 26

Claims 27-32 are dependent on independent claim 26 or a claim dependent thereon. Thus, dependent claims 27-32 are respectfully submitted to be allowable, for at least the reason that they are dependent upon allowable independent claim 26.

V. Conclusion

It is believed that the above discussion amply demonstrates the failure of the Office Action of September 23, 2002 to properly meet the PTO's initial duty of supplying the factual basis supporting a rejection of a patent application, including a rejection under 35 U.S.C. § 102. Furthermore, Applicants have amended independent claim 33.

In view of the foregoing, it is believed that claims 1-33 are in condition for allowance. Reconsideration of the present application as amended is respectfully requested. Timely action toward a Notice of Allowability is hereby solicited. The Examiner is encouraged to contact the undersigned by telephone to resolve any outstanding matters concerning the present application.

Respectfully submitted,

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MARKED UP VERSION OF CLAIMS
PURSUANT TO 37 C.F.R. 1.121

33. An apparatus for illuminating a license plate of a vehicle, comprising:
a light emitting diode projecting light directed substantially away from the
vehicle;
a housing substantially enclosing the light emitting diode; and,
lensless means within the housing for substantially preventing light from the
diode from escaping the housing in a rearward direction and for redirecting the light
through a window in the housing ~~toward~~to illuminate the license plate in a substantially
uniform manner.